CLAIMS

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1	1. A method for inserting a given node into ring operations of an ATM ring,	7
2	including the steps of:	
3	A. operating the given node as a bypass for ATM traffic on the ring;	
4	B. operating the given node to pass through virtual paths known to the given	
5	node;	
6	C. establishing connection to inter-ring management channel;	
7	D. exchanging information between the given node and a fing hub node to ope	rate
8	the given node as a pass through for the ATM traffic on other existing virtual path	
9	connections on the ring;	
10	E. assigning to the given node one or more virtual paths to direct traffic to and	
11	from the given node over the ring;	
12	F. communicating the virtual path assignment to all nodes on the ring; and	
13	G. providing to the given node connection information for all of the virtual part	ths
14	and virtual circuits on the ring.	
1	2. The method of claim 1 wherein the step of providing connection information to the	
2	given node includes providing routing tables to the given node.	
1	3. The method of claim 2 wherein the step of providing connection information further	r
2	includes providing the information from the hub node to the given node.	
1	4. The method of claim 3 wherein the step of providing connection information further	r
2	includes	
3	i. providing an error checking code with the information, and	
4	ii. at the given node checking the information with the error checking cod	le to
5	determine that the information is correct.	

- 5. The method of claim 1 wherein the step of assigning the virtual path to the given node
- 2 further includes





- ii. the hub node responding to the request with the assignment.
- 6. The method of claim 1 wherein the step of communicating the firtual path assignment
- to all of the nodes includes updating routing tables maintained by the nodes. 2
- 7. The method of claim 1 wherein the step of communicating the virtual path assignment
- to all of the nodes includes providing to the nodes call set/up information for calls over 2
- the newly assigned virtual path. 3

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- 8. The method of claim 1 further including the steps of 1
- F. establishing connections to and from the given node over the assigned virtual 2
- path; and 3
 - G. tearing down connections over the assigned virtual path.
- 9. The method of claim 8 wherein the step of communicating the virtual path assignment
- to all of the nodes includes updating routing tables maintained by the nodes. 2
- 10. The method of claim 9 further including updating the routing tables with call set up 1
- and tear down information associated with the one or more virtual paths assigned to the 2
- given node. 3
- 11. The method of claim 1 further including the step of, at the given node, shaping traffic 1
- over the virtual circuits associated with the established connections on the ring. 2
- 12. A method for removing a failed node from an ATM ring, the method including the
- steps of: 2
- A. defermining that a given node has failed; 3
- B. tearing down virtual circuit connections directed to or initiating from the failed
- node; 5

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C/tearing down virtual paths assigned to the failed node; and

- D. providing to the remaining nodes on the ring updated ring topology
- s information that excludes the failed node.
 - 13. The method of claim 12 wherein
- i. the step of determining that the given node has failed includes having a ring
- 3 hub node determine the failure, and
- ii. the steps of tearing down the virtual circuit and virtual path connections are
- 5 controlled by the hub node.

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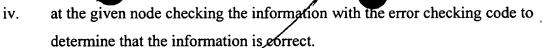
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- 14. A method for inserting a given node into ring operations of an ATM ring and
- removing a failed node from the ring operations, the method including the steps of:
 - A. operating the given node as a bypass for ATM traffic on the ring;
 - B. placing all other known virtual paths in by pass mode;
 - C. establishing connection to inter-ring management channel;
 - D. exchanging information between the given node and a ring hub node to operate the given node as a pass through for the ATM traffic on existing connections on the ring;
 - E. assigning to the given node one or more virtual paths to direct traffic to and from the given node over the ring;
 - F. communicating the virtual path assignment to all nodes on the ring; and
 - G. providing to the given node connection information for all of the virtual paths and virtual circuits on the ring.
- 15. The method of claim 14 wherein the step of providing connection information to the given node includes providing routing tables to the given node.
 - 16 The method of claim 15 wherein the step of providing connection information further
- 2 includes providing the information from the hub node to the given node.
- 17. The method of claim 15 wherein the step of providing connection information further
- 2 includes

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iii. providing a error checking code with the information, and





- 18. The method of claim 14 wherein the step of assigning the virtual path to the given
- node further includes

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- iii. the given node requesting the assignment from the hub node, and
- iv. the hub node responding to the request with the assignment.
 - 19. The method of claim 14 wherein the step of communicating the virtual path
- assignment to all of the nodes includes updating routing tables maintained by the nodes.